THE CAMBRIDGE STATISTICS DISCUSSION GROUP

Thursday 21st March 2024 7:15 for 7:45

The Lightfoot Room
Divinity School
St John's College
St John's Street, Cambridge CB2 1TP

What has genomics ever done for us? A 20-year history of the human genome

Klaudia Walter
Sanger Institute

Abstract: The Human Genome Project (HGP) was launched in 1990 as the world's largest collaborative biological project to determine the three billion base pairs that make up human DNA. It was completed in 2003 with 92% of the genome completed, and at a cost of $2.7 billion. Since then, thousands of genomes have been sequenced at much greater speed and at much reduced cost of $600 (or less); the total amount of data runs in the order of petabytes (millions of gigabytes).

The UK10K Cohorts Project was an early project (2010-2015) based on whole-genome sequence data from almost 4,000 individuals to research the relationship between rare and common genetic variants with a comprehensive set of quantitative measures that are relevant to cardiovascular and metabolic disease. The largest whole-genome sequence project to date is UK BioBank (https://www.ukbiobank.ac.uk/) with whole-genome sequence data for 500,000 individuals that can be linked to a wide range of biochemistry markers, online questionnaires, electronic health-related records and MR imaging data.

Speaker: Klaudia Walter is a senior staff scientist in the Human Genetics Department at the Wellcome Sanger Institute. For the past 16 years she has worked on various statistical aspects of genomics, for example, on structural variations in the 1000 Genomes Project (https://www.internationalgenome.org/1000-genomes-summary), genome-wide associations studies (GWAS) and population genetics in the UK10K project (https://www.uk10k.org/) and INTERVAL project (https://www.sanger.ac.uk/collaboration/interval/). One of her current projects is Genes & Health (https://www.genesandhealth.org/) which is a huge long-term study of 100,000 people of Bangladeshi and Pakistani origin in East London and Bradford.

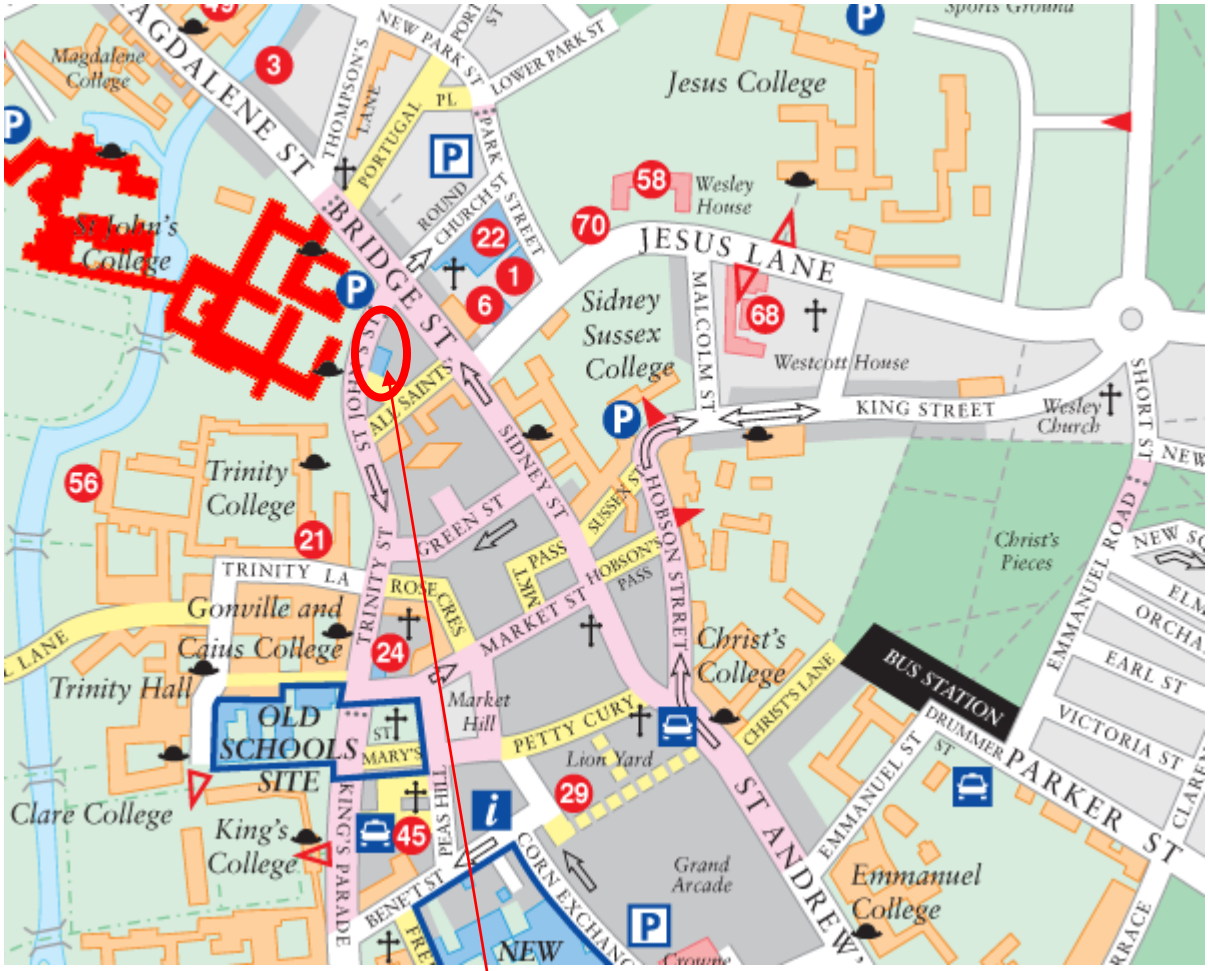
Directions: The Divinity School is the old building opposite St John's College on St John's Street. Go down the alley situated on the opposite side of St John's Street to St John's Great Gate. The Lightfoot Room is entered via the first door on your left. The nearest car park is at Park Street. Arrivals after 7-45pm may gain admittance by contacting the secretary on 07761769436.

Provisional Next Meetings:
2nd May – Roger Sewell on 'Monitoring Vaccine Effectiveness: can we trust results from parties with a vested interest'.
8th October – Fabio Rigat (AstraZeneca).
4th November – Mihaela van der Schaar (Cambridge Centre for AI in Medicine).
27th November – Peter Treasure (Peter Treasure Statistical Services Ltd).
3rd February 2025 – Lara Mani (Centre for the Study of Existential Risk).
3rd March – James Grime (Institute of Continuing Education) on 'Alan Turing and the Enigma Machine'.

Supper: Some members eat regularly in Wetherspoons (St Andrew's Street) before each meeting **at 5-45pm**. All welcome !
Subscriptions: of 1 pound are now due for attending the 2023-2024 session.
Secretary: Peter Watson, MRC Cognition and Brain Sciences Unit, 15 Chaucer Road, Cambridge CB2 7EF;

telephone 01223 769479; E-mail peter.watson@mrc-cbu.cam.ac.uk

Slides and .mp3 files of old talks: http://www.mrc-cbu.cam.ac.uk/people/peter.watson/csdg.html



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